

**REMARKS**

The Official Action dated July 21, 2004, has been carefully considered. Applicants appreciate the Examiner's thorough review of the application. Consideration of the changes and remarks presented herein and reconsideration of the objections and rejections are respectfully requested.

By the present amendment, claims 1, 26 and 30 have been amended herein. Support for the amendments can be found in the specification, claims and drawings as originally filed, for example in the specification at page 6, lines 19-20. Claims 8-20, 22-25, and 31-32 have been withdrawn from consideration by the Examiner. Accordingly, claims 1-7, 26, 27 and 30 have been considered in this application. As set forth below, it is believed that claims 1-7, 26, 27 and 30 are in condition for allowance. It is believed that these changes do not involve any introduction of new matter, whereby entry is believed to be in order and is respectfully requested.

In the Official Action, the Examiner rejects claims 1-7, 26, 27 and 30 under 35 U.S.C. § 112, first paragraph, arguing that they fail to comply with the written description requirement. In light of the contentions provided below, Applicants believe this rejection has been overcome and respectfully request reconsideration.

The Examiner contends that the expressions "furnace exhaust material" (FEM) and "post combustion material" (PCM) are not clearly defined and that it is unclear as to how these materials relate to each other. However, the specification is clear as to the relationship between FEM and PCM. The FEM is generated from the exhaust of the steel making process. The portion of the FEM that is too heavy or too large to be exhausted to a bag house is considered the PCM (See Specification at p. 1, lines 11-13). Thus, PCM is essentially a subset of the FEM. It is the PCM that is then recycled into the steel making process. If the

language of the claim is such that a person of ordinary skill in the art can interpret it, the language complies with 35 U.S.C. § 112, first paragraph. MPEP §2173. The meaning of PCM and FEM is consistently used in the specification and clearly provided for the understanding of those of ordinary skill in the art. Accordingly, it is respectfully requested that the rejection be reconsidered and withdrawn.

As such, Applicants believe that the claimed steel processing materials as defined by claims 1-7, 26, 27 and 30 are sufficiently taught such that the written description requirements are satisfactorily met and that one having ordinary skill in the art could reasonably convey that the Applicants had possession of the claimed invention. Therefore, rejections under 35 U.S.C. §112, first paragraph, have been overcome. Reconsideration is respectfully requested.

In the Official Action, the Examiner rejects claims 1-7, 26, 27 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Calderon et al (U.S. Patent No. 6,214,085) in view of Lehner et al (U.S. Patent No. 5,853,453). The Examiner asserts that Calderon et al disclose a method for direct steelmaking including the step of pneumatically injecting a fluxed iron/carbon product with immediate foaming of the slag, where the iron/carbon product having been made by mixing iron ore concentrate, coal and dolomitic limestone. Moreover, the Examiner asserts that Calderon et al disclose a material feeding system which feeds these materials having iron ore into a hopper, and where the materials may be dried prior to delivery to the hopper. The Examiner notes that Calderon et al do not expressly disclose the concentrations of the coal and flux, such as dolomite in the fluxed iron/carbon product, but contends that it would be obvious to modify the composition in order to achieve immediate foaming within the furnace.

As will be set forth in detail below, it is submitted that the steel processing materials

of claims 1-7, 26, 27 and 30 are non-obvious and patentably distinguishable from the teachings of Calderon et al in view of Lehner et al. Accordingly this rejection is traversed and reconsideration is respectfully requested.

The invention as defined by claim 1, from which claims 2-7 depend, is directed towards a steel processing material for addition into a heat of steel in a steel making furnace including a dried post combustion material (PCM) recycled from the exhaust of the steel making furnace and a slag foaming material, wherein the dried post combustion material is sorted prior to being added to the steel making furnace.

The invention, as defined by claim 26, from which claim 27 depends, is directed towards a steel processing material, at least partially recycled from an electric arc furnace, including an iron-bearing material having less than 2% moisture by weight and recycled from the arc furnace and a slag foaming material, wherein the steel processing material contributes to the foaming of slag when added to a heat of steel in the arc furnace and reacts with the heat to recover iron from the iron-bearing material to the heat, further wherein less than about 1% by weight of the total iron in the heat being recovered is iron.

Claim 30 is directed toward a steel processing material for addition into a heat of steel in an electric arc furnace having a dried post combustion material (PCM) recycled from the exhaust of an electric arc furnace and a slag forming material, wherein the dried post combustion material is sorted prior to being added to the electric arc furnace, and wherein the recovery of iron from the steel processing material is only a portion of the iron in the heat.

In order for references to be relied upon to support a rejection under 35 U.S.C. § 103 they must provide an enabling disclosure, i.e., they must place the claimed invention in the possession of the public. *Glaxo Inc. v. Novopharm Ltd.*, 34 U.S.P.Q.2d, 1565 (Fed. Cir.

1995); *In re Payne*, 203 U.S.P.Q. 245 (CCPA 1979). Applicant finds no teaching or suggestion by Calderon alone or in combination with Lehner et al of a steel processing material as set forth by claims 1, 26 or 30. For example, in regards to claims 1 and 30, Calderon et al fail to teach the sorting of the iron ore and iron bearing materials. As defined by claims 1 and 30 of the present invention, the steel processing materials include a dried combustion material that is sorted prior to being added to the respective furnace. As previously asserted, Calderon et al fail to teach such steel processing materials. Applicants find no teaching or suggestion in Lehner et al to make up for the deficiency of Calderon et al, and Lehner et al have not been cited in the Office Action for such purpose. As such, Calderon et al alone or in the argued combination with Lehner et al fail to teach the presently claimed steel processing materials as set forth in claims 1 and 30.

In addition, claim 26 is not taught or suggested by Calderon et al alone or in combination with Lehner et al. Claim 26 recites that the steel processing material includes an iron-bearing material having less than 2% moisture by weight and where less than about 1% by weight of the total iron in the heat being recovered is iron. As previously asserted, Calderon et al fail to teach such steel processing materials. Applicants find no teaching or suggestion in Lehner et al to make up for the deficiency of Calderon et al. Lehner et al generically discloses residual moisture having a maximum of 5% but does not also show that less than about 1% by weight of the total iron in the hat being recover is iron. Moreover, Lehner et al do not place any emphasis on the moisture content as clearly as is taught by the presently claimed invention. As such, Calderon et al alone or in the argued combination with Lehner et al fail to teach the presently claimed steel processing materials as set forth in claim 26.

It is therefore submitted, that the presently claimed steel processing materials as

**Serial No. 09/960,276**  
**Amendment dated November 22, 2004**  
**Reply to Official Action of July 21, 2004**

defined by claims 1-7, 26, 27 and 30 are non-obvious over and patentably distinguishable from Calderon et al in view of Lehner et al whereby the rejection under 35 U.S.C. §103 has been overcome. Reconsideration is respectfully requested.

It is believed that the above represents a complete response to the Examiner's objections and rejections under 35 U.S.C. §§103 and 112, first paragraph, and places the present application in condition for allowance. Reconsideration and an early allowance are respectfully requested.

Respectfully submitted,



---

Clayton L. Kuhnell  
Reg. No. 48,691  
Attorney for Applicants  
DINSMORE & SHOHL LLP  
1900 Chemed Center  
255 E. Fifth Street  
Cincinnati, Ohio 45202  
(513) 977-8377